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U.S. BUSINESS OUTLOOK, LONG-TERM

The future of the economy looks better than it did just a year ago.

One reason is that late last year the government revised the statistical picture of the past decade and a half to show greater economic growth in the 1970s. More particularly, capital investment in the '70s was much stronger than formerly believed. And that means the nation's stock of plant and equipment is not in quite such terrible shape and that opportunities for increasing productivity are not as bad as they once seemed.

Aside from what may seem like statistical sleight-of-hand, another reason for thinking the economic future a little brighter is the Reagan Administration, which ardently advocates policies to promote economic growth and which thus far seems successful in getting those policies through Congress. While such policies could well create more inflation than the Reagan people project, they nonetheless raise the chances of getting good growth in the 1980s.

Pointing to the good economic news does not, of course, mean there is no bad news. In fact, while the forecast calls for solid advances in real gross national product (GNP) this decade, it nonetheless projects slower growth than was attained in the 1950s or 1960s. From 1979 to 1990,

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inflation-adjusted GNP is forecast to rise at a 3.4% average annual rate, compared to 3.9% in the 1950s and 4.2% in the '60s. In the 1970s, however, growth averaged only 3.1% a year.

The forecasts of GNP, investment, consumption, industrial production, and inflation at the end of this report are based on a study entitled "The American Economy: Prospects for Growth to the Year 2000," published in May. A summary of "The American Economy" that discusses the methodology of the forecasts accompanies this U.S. Outlook. Forecasts of population, households, and housing starts also appear at the end of this outlook.

Since "The American Economy" gives an overview of the issues that will determine growth in the '80s, the general long-term economic outlook will not be discussed here. Instead, this report analyzes two domestic developments--defense spending and housing--and one international topic--Japan--that will be of major importance this decade.

While analytically quite different, defense and housing share at least one trait--they should be somewhat more predictable than many other economic variables in the coming years. The military spending forecast takes its cue from the Reagan budget and from the political consensus that America's defenses must be bolstered. The long-term housing forecast depends heavily on the size and age structure of the adult population in the 1980s--data which in turn depend on the population's current (thus knowable) characteristics. So both defense and housing can be forecast with some degree of confidence based on information available at present--information that points to rapid growth for each of these sectors in the 1980s.

This U.S. Outlook also contains a special section on a subject of increasing importance for U.S. business--Japan. In the 1970s, Japanese companies surged into a position of international prominence, with obvious consequences for competition in both foreign and domestic markets. What further impact will Japan have on the U.S. domestic market in the 1980s? On the other hand, what opportunities will a strong Japanese economy offer to American companies seeking to invest in or export to Japan? The final section of this report addresses these questions.

ECONOMICS AND THE REAGAN MILITARY PROGRAM

President Reagan is an avowed proponent of limiting the size of government. Yet at the same time he is proposing large increases in government spending on national defense. Can the President have his cake and eat it too? What will be the effects on the overall economy of a big military buildup--specifically, how will it affect inflation? And what will be the impact on defense-related industries as they try to meet both civilian and military demands?

This analysis is presented in two parts. The first focuses on the relationship between the proposed military buildup and its general economic effects. The second deals with the effects on "front-line" industries.

Defense: Will it Detonate an Inflation Bomb?

Ronald Reagan has proved he is no voodoo economist. During the 1980 campaign, Mr. Reagan was hit with the voodoo charge when he claimed he could cut taxes and raise military spending while at the same time balancing the budget. As it turns out, the President will undoubtedly succeed in cutting taxes and raising military spending; but to do it he has resigned himself to two more years of deficit spending.

Now the President is faced with another voodoo charge: How can he get a tremendous, Vietnam-style military buildup without kicking off another round of inflation? Here we are in peacetime, the charge goes, with consumption continuing apace, and yet we are about to boost military spending as if we were at war; thus, we will be shifting resources into

production of goods for which there is no market, and we will be putting a strain on industry that will cut its capacity to produce consumer goods. Prices will inevitably shoot up.

To put this argument and the Reagan military buildup into context, data on the Korean and Vietnamese buildups are assembled in Chart I.

Chart I. Defense, Inflation, and Consumption

	----------Defense Outlays----------				
Year	$ Billions	$ 1972 Billion	% of GNP	Inflation Rate	Real Consumption % Change
1950	$12.4	$29.7	4.3%	2.1%	5.6%
1951	21.9	48.6	6.6	6.6	1.3
1952	43.4	86.5	12.5	1.4	2.5
1953	49.9	96.6	13.6	1.6	3.8
1965	47.5	69.3	6.9	2.2	5.6
1966	54.9	76.6	7.3	3.2	5.1
1967	68.2	92.3	8.5	3.0	2.9
1968	78.8	101.7	9.0	4.4	5.3

SOURCES: Office of Management and Budget; U.S. Department of Commerce

From 1950 to 1953, when the Korean war ended, inflation-adjusted military spending leaped by 225%, and defense outlays as a share of GNP tripled to 13.6%. Yet only in 1951, the first year of the buildup, did inflation take off. In part, the favorable inflation performance could be chalked up to price controls. But even after controls were lifted inflation did not bubble up, averaging only 2% a year from 1954 to 1965.

Moreover, Chart I shows that the necessity of producing war materiel sharply constricted real consumption only in 1951. The small increase in 1951 consumption, however, heavily reflects the fact that people stocked way up on durable goods in 1950 in anticipation of

war-induced shortages; they thus had no need to purchase so many durables the following year. Apparently, then, the Korean war put no more than a temporary squeeze on the economy's ability to meet both military and consumer needs at noninflationary prices.

The Vietnam experience was quite different. First, the relative buildup was much smaller. While constant-dollar defense spending zoomed by 225% from 1950 to 1953, it jumped by "only" 47% from 1965 to 1968. (Real military outlays peaked in 1968.) And defense expenditures during Vietnam took up a smaller share of GNP than they did during the height of Korea.

As another measure of Vietnam's smaller claim on national resources, real consumer spending surged even as the military enlisted a growing share of GNP. (A credit crunch in late 1966 put a crimp on the economy in 1967, dragging down the growth of consumption among other things.) With the economy running hot, manufacturers' capacity utilization rate hit a historic peak and inflation began to pick up.

Inflation did, in fact, shoot higher in 1951 than in any of the Vietnam buildup years; but after Korea the U.S. enjoyed a decade of 3.5% annual growth while suffering an inflation rate of only 2%. Vietnam, on the other hand, launched an inflationary juggernaut which fifteen years later is still not under control: From 1965 to 1973 (when U.S. combat involvement ended) inflation pushed foreward at a 4.5% average annual clip; inflation then charged ahead by 7.7% per year from 1973 to 1980. Thus, after contributing to political turmoil in the 1960s, Vietnam contributed to economic turmoil in the 1970s.

Now that defense spending is again on the rise, the question for the 1980s is: Will the economic consequences of the Reagan peacetime buildup resemble that of Korea, Vietnam, or neither?

In current dollars, the proposed Reagan Budget (Chart II) calls for a 58% surge in defense spending from 1981 to 1984--smaller than the 1965-68 military buildup and far smaller than the buildup in 1950-53. If

Chart II. The Reagan Military Budget

Year	$ Billions	1972$ Billions
1981	$162.1	$77.8
1982	188.8	83.0
1983	226.0	92.6
1984	255.6	98.4

SOURCE: Office of Management and Budget

the comparison is made in constant 1972 dollars, the seemingly huge Reagan rise comes up as significantly smaller than either Korea or Vietam, as shown in Chart III.

Chart III. Comparative Military Buildups

	---------Current Dollars-------		-----Constant 1972 Dollars----	
Period	% Increase	$ Increase (Billion)	% Increase	$ Increase (Billion)
1950-53	302%	$37.5	225%	$66.9
1965-68	66	31.3	47	32.4
1981-84	58	93.5	26	20.6

What makes the Reagan budget seem so mammoth, of course, is the number of (inflated) dollars the President wants added to defense spending--$93.5 billion over three years. But since the budget assumes a 25% military inflation rate during that time span, "real" defense spending is budgeted to rise by far less than during Korea or Vietnam. In short, the Reaganites are not exactly pushing for a wartime military budget.

But this is peacetime. So the increase being sought in military expenditures looks tremendous. And since the Administration wants both guns and butter, won't the results of such a policy be akin to those of Vietnam? If the answer is "yes," the U.S. is headed for super-inflation and much higher interest rates, with disastrous effects for the nation's economic (and political) well-being.

The Reagan team, of course, rejects such an outcome. They claim that, on the contrary, a military buildup is not synonymous with rising inflation rates; in fact, they assert, even with increased resources going to the military, inflation will--mirabile dictu--come down.

Before doing any close analysis, the Reagan contention cannot be rejected out of hand. True, Vietnam landed the U.S. in an inflationary quagmire from which it has yet to emerge. But the much bigger relative boost in military expenditures during Korea was accompanied by only a one-year spike in inflation. And even if price controls get all the credit for that, it is significant that the end of controls did not lead to large increases in inflation in subsequent years. So large military outlays are not necessarily associated with high and rising rates of inflation.

Now for a closer look at how Korea and Vietnam were financed, and thus how inflation was or was not contained. The government can pay for war in two basic ways--raise taxes or borrow. And it can borrow in two ways--it can sell debt to the private sector, and it can sell debt to the Federal Reserve. When it adopts the latter tack, the Fed "prints money" in exchange for notes from the Treasury Department. In this way, the money supply balloons, leading eventually to a higher price level.

Chart IV compares the financing of the Korean and Vietnam wars.

Chart IV. The Financing of Korea and Vietnam

Year	Government Revenues	Surplus(+) Deficit(-)	U.S. Securities Held By Fed	Money Supply, % Change
	----------Billions of Current Dollars----------			
1950	$ 39.5	$ -3.1	$ 20.8	2.6%
1951	51.6	+6.1	23.8	4.5
1952	66.2	-1.5	24.7	5.0
1953	69.6	-6.5	25.9	2.5
1965	116.8	-1.6	40.8	4.3
1966	130.9	-3.8	44.3	4.5
1967	149.6	-8.7	49.1	3.9
1968	153.7	-25.2	52.9	7.0
Change During[a] Period				
1950-53	30.1	-5.0	5.1	12.4
1965-68	36.9	-39.3	12.1	16.3
1965-73	115.4	-100.1	37.7	56.6

SOURCE: U.S. Department of Commerce

[a]Figures for the deficit are cumulative totals for the periods.

On the tax side of war financing, Congress approved measures at the outset of Korea that sharply boosted government revenues in 1951 and 1952. By contrast, the government resisted raising taxes when Vietnam heated up. A tax surcharge finally passed in 1968, but not until the cumulative deficit from 1965 to 1968 reached $39 billion.

On the monetary side, governments during both wars covered part of their growing deficits by selling securities to the Federal Reserve. During Vietnam, however, such sales were more common. And due to

inadequate revenues, the deficits during Vietnam also built up more quickly, thus requiring greater borrowing and larger increases in the money supply.

Another key point about Vietnam financing is that the tax surcharge was temporary, expiring in 1970. Thus, large deficits continued to roll up through the rest of the war with the consequently sharp increases in money leading to firm entrenchment of inflation.

This tale of two wars seems to contain some important lessons: It is possible for the U.S. economy to absorb large increases in defense outlays without erupting into an inflationary pox. It is also possible for consumers to raise their living standards even while the military takes a larger share of national resources (and produces no consumable goods with those resources). But unless a military buildup is prudently financed, the inflationary consequences can be serious.

Like President Johnson, President Reagan is promising the country it can have both guns and butter. Not wanting to renege on the butter part of the bargain, Johnson initially opposed a tax increase to finance Vietnam. But beyond opposing tax increases, Reagan wants to cut taxes and still pay for more guns. Where will the money come from then if not from the Fed's printing presses? How, then, can the Reagan government provide guns, butter, and reduced inflation all at the same time without practicing voodoo?

The crux of the President's strategy lies in the total government budget, not just the military budget. If the Reagan plan is adopted in all of its parts, total outlays of the U.S. government would drop from 23% of GNP in 1981 to 19% in 1984. To hit this target, according to Administration projections, nondefense spending would have to decline

from three-fourths to two-thirds of overall outlays. That means nondefense expenditures would grow by less than 2% a year before adjusting for inflation; in real terms nondefense spending would fall significantly. (By contrast, real government spending for both guns and butter accelerated under Lyndon Johnson; and for the past decade and a half, real nondefense spending grew by an average of more than 5% a year.) By offsetting increased defense with decreased nondefense outlays, the eventual goal of President Reagan is to eliminate budget deficits, thus relieving pressure on the Fed to pump up the supply of money.

This ties into another major part of the Reagan plan to control inflation--reduction of money growth. But because the Administration foresees large deficits in the next couple of years, the Fed will feel pressure to increase the money supply by more than the Administration desires. And if the Fed resists the temptation to print money, the Treasury will then have to borrow large sums from the private sector, putting upward pressure on interest rates.

Because of these problems, the inflation forecast in this report (measured by the GNP deflator) is 8.4% a year from 1981 to 1984--less optimistic than the Reagan scenario which project 6.6% a year from 1981 to 1984. Part and parcel of the less optimistic inflation forecast is the assumption that growth of nondefense spending will not be as low during the next three years as proposed by the Administration; hence budget deficits will be somewhat larger. (At the same time, it is assumed that military spending by 1984 will not reach the levels desired

by the Administration, so that budget deficits will not run wild.) Larger budget deficits will then put greater pressure on the Fed to increase money growth.

On the whole, however, the Reagan plan is expected to quell--if not to whip--inflation. Granted, the military buildup and resulting deficits will be large in the next few years, but not so large when compared to the size of the U.S. economy, as shown in Chart V.

Chart V. The Relative Smallness of the Reagan Deficits

Period	Cumulative Defensive Outlays as % of GNP	Cumulative Deficit as % of GNP
1951-53	11.0%	0.2%
1966-68	8.3	1.6
1982-84[a]	5.9	0.6

[a]Reagan Administration projections are used for defense outlays, deficits, and GNP. The years 1982-84 are used since the Reagan policy was not in effect in 1981.

Moreover, capital markets have grown tremendously since the Korean war--in 1953 nonfinancial corporations raised $29.5 billion in U.S. credit markets, compared to $365.4 billion in 1980. Thus, though the projected Reagan deficits are larger relative to the economy than was the Korean war cumulative deficit, credit markets have expanded so fast that financing the deficit should not create a major problem.

In sum, the Reagan budget program will result in large deficits that will pressure the Fed to pump up the money supply beyond it targets, and/or will require heavy government borrowing that will help keep

interest rates high. Nonetheless, the deficits are not what they seem at first blush--the immense size of the U.S. economy and its capital markets cut them down to size. In short, while financing the deficits will prevent inflation from falling quickly, the deficits can probably be managed without seriously undermining the anti-inflation campaign being fought on the monetary front.

Can Defense Industries Win the Battle Against Bottlenecks?

The above section argues that the economy can accommodate the Reagan defense buildup without serious dislocations in consumption or inflation--provided the buildup is accompanied by a slowdown in money growth and in nondefense spending. But while the impact of the program on the overall economy should not be major, the effect on particular industries will be highly noticeable.

The industries standing to gain most directly from the hike in defense spending are ordnance, aircraft, shipbuilding, and communication equipment. About two-thirds of the output of ordnance producers and nearly half the sales of aircraft and shipbuilding companies go to the U.S. military. The Defense Department buys roughly one-fourth of the nation's output of communications equipment. Thus, it is not surprising that production in these industries skyrocketed during the Vietnam buildup, as shown in Chart VI. (Of the four industries, production data for ordnance only is available for the Korean war years.) By comparing output growth in the mid-1960s with the average for the quarter century ended in 1980, it is clear that these front-line industries posted extraordinary output gains during Vietnam.

Chart VI. Production of Key Defense Industries

Year	Percent Change in Production			
	Aircraft	Ships	Ordnance	Communications Equipment
1965	6.2%	11.3%	21.5%	10.0%
1966	22.9	9.4	24.3	13.4
1967	13.1	6.3	20.6	8.1
1968	3.0	-2.4	15.6	9.5
Average Annual % Change				
1954-80	2.0	4.7	1.6	7.1
1950-53	NA	NA	77.0	NA
1965-68	12.7	8.9[a]	20.1	10.3

SOURCE: Federal Reserve Board

[a]1964-67

If these industries respond to the Reagan defense increases in the way they responded to Vietnam, average annual production would rise as follows: aircraft (7.5%), ships (5%), ordnance (12%), and communications equipment (6%). However, production gains will likely be slower. For one thing the political pendulum will presumably swing away from the military so that the projected increases in defense spending get pared back by 1983-84. Secondly, the overall economy is not expected to grow as fast as it did in the mid-1960s, so that non-military sales will not be as brisk.

In particular, the market for commercial aircraft in the next couple of years will likely be weak, resulting in sluggish growth in total aircraft output. On the other hand, because its sales are so heavily dependent on the military alone, ordnance should show the most rapid growth of the four industries in the next few years.

Besides helping firms that sell directly to the military, the rise in defense spending will also boost output of suppliers to ordnance, aircraft, shipbuilding, and communications equipment companies. The key supply industries are shown in Charts VIIA to D, with "key" being measured in two ways--by the volume of sales and by percent of total sales going to direct defense-related industries.

Chart VIIA. Ordnance Suppliers

Key Suppliers	Sales to Ordnance (Millions of 1972 $)	% of Total Sales Going to Ordnance
Blast Furnaces, Steel Mills	$319	1.2%
Primary Metal Products	38	8.8
Radio & TV Equipment	124	1.4
Electronic Components (other than semiconductors)	100	2.0
Aircraft & Missile Equipment	349	7.7
Engineering & Scientific Instruments	26	2.2

Chart VIIB. Aircraft Suppliers

Key Suppliers	Sales to Aircraft (Millions of 1972 $)	% of Total Sales Going to Aircraft
Blast Furnaces, Steel Mills	$193	0.7%
Iron & Steel Forgings	127	6.9
Aluminum Rolling & Drawing	160	4.4
Nonferrous Rolling & Drawing	69	6.5
Nonferrous Wire Drawing	79	6.6
Nonferrous Castings	117	19.1
Nonferrous Forgings	122	41.6
Screw Machine Products	116	3.7
Plating & Polishing	45	4.4
Metal Coating	26	3.5
Special Dies & Tools	136	3.3
Miscellaneous Nonelectrical Machinery	333	9.3
Radio & TV Equipment	756	8.3
Semiconductors	181	7.7
Electronic Components (other than semiconductors)	255	5.1
Engine Electrical Equipment	56	3.1
Engineering & Scientic Instruments	66	5.7
Mechanical Measuring Devices	51	2.9
Optical Instruments	43	7.0

Chart VIIC. Shipbuilding Suppliers

Key Suppliers	Sales to Shipbuilding (Millions of 1972$)	% of Total Sales Going to Shipbuilding
Blast Furnaces, Steel Mills	$287	1.1%
Steam Engines & Turbines	59	2.7
Blowers & Fans	23	3.2
Electric Welding Apparatus	30	5.0

Chart VIID. Communications Equipment Suppliers

Key Suppliers	Sales to Communications Equipment (Millions of 1972 $)	% of Total Sales to Communications Equipment
Nonferrous Wire Drawing	$ 25	2.1%
Metal Stampings	82	3.1
Plating & Polishing	51	4.9
Instruments to Measure Electricity	67	4.7
Wiring Devices	63	3.0
Electron Tubes	78	6.4
Semiconductors	428	18.1
Electronic Components (other than semiconductors)	926	18.4

SOURCE: The Detailed Input-Output Structure of the U.S. Economy: 1972

NOTES: All data refer to 1972. Miscellaneous nonelectrical machinery includes a wide variety of companies producing such goods as crankshafts and camshafts, cylinders, filters, and hose.

Clearly, big indirect gainers from a military buildup will be producers of high-technology goods like semiconductors, other electronic components, and scientific instruments, as well as makers of heavy metal goods such as forgings and castings. In turn, primary steel and nonferrous metal producers will feel some impetus to hike output.

Forecasts of industrial production growth for major industries directly and indirectly affected by the proposed defense buildup are

presented in Chart VIII. The key assumption behind the forecasts is that real defense spending rises by an average of 5.1% a year from 1980 to 1985 and real GNP advances at a 3.8 clip.

Chart VIII. Industrial Production Forecasts

INDUSTRY	Average Annual Growth (%) 1980-85	1979-85
Ordnance	5%	5%
Aircraft	2	3
Communications Equipment	4	4
Shipbuilding	4	3
Electronic Components	10	9
Scientic Instruments	7	6
Fabricated Metals	5	3
Iron & Steel	7	2
Nonferrous Metals	6	3
Real Defense Spending	5.1	5.2
Real GNP	3.8	3.1

Growth for both 1980-85 and 1979-85 are shown in order to indicate the effect on growth due to depressed production in 1980. In other words, while the steel industry is expectd to recover from its 1980 depression it is not viewed as a boom industry, as the 1980-85 comparison alone might suggest.

If the forecasts seem low in comparison with production gains during the Vietnam buildup, it should be noted that from 1965 to 1968 the economy was moving ahead at an annual clip of 4.4%. The above forecast assumes slower real GNP growth in 1980-85. The rest of the economy, therefore, is not expected to spur production as it did in the mid-1960s. Moreover, real gains in military spending are expected to be much smaller than the increases during Vietnam

A question that cannot be answered by examining Charts VIIA-D is whether the Reagan military program will cause industrial bottlenecks. One way to get a handle on this issue is to look at the ratio of unfilled orders to shipments--a rough measure of an industry's ability to meet new orders quickly. Examination of Chart IX indicates

Chart IX. The Vietnam Squeeze on Capacity

	Ratio of Unfilled Orders to Shipments					
Year	Fabricated Metals	Aircraft	Ships & Tanks	Communications Equipment	Steel	Nonferrous Metals
1965	3.36	14.92	12.19	6.89	1.83	1.52
1966	3.54	16.18	14.37	7.77	1.92	1.71
1967	3.61	14.03	9.48	6.64	1.97	1.69
1968	3.81	15.57	12.32	7.68	1.95	1.40
1980	2.70	19.87	18.15	6.62	2.88	1.96

SOURCE: U.S. Census Bureau

that the unfilled orders/shipments ratio for all defense-related industries blipped up in 1966. Thus, some rise in the ratio is also expected in the next several years. But will an increase in backlogs relative to shipments mean serious bottlenecks?

In the fabricated metals and communications equipment industries, the 1980 ratios of backlogs to shipments were below those of 1965, suggesting no bottleneck potential here. Given the depressed levels of output of steel and nonferrous metals last year, the relatively high backlog/shipments ratios in those industries do not indicate tight capacity conditions. Thus, despite the ratios, the steel industry was

using only 79% of capacity at the end of last year, and nonferrous metals was using 86%. Both industries were operating at significantly higher levels for most of the mid-1960s.

The backlog/shipments ratio for aircraft and ships and tanks were sharply higher at the end of last year than they were at any time during the Vietnam buildup. These industries, therefore, may be able to meet the military's needs only at the cost of stretching out deliveries to non-military customers. At the same time, prices are more likely to rise in aircraft and ships than in the other defense-related industries. (In general, the Reagan Administration is assuming that prices paid for military goods and services will rise more quickly in the next few years than will prices in the economy as a whole.)

The strain on aircraft capacity will probably be eased, however, by a decline in commercial airliner output. Foreshadowing this development is the fact that total new aircraft orders are down in 1981 compared to 1980, and the industry's backlog/shipments ratio dropped to 18.91. in mid-1981 from 19.87 at the end of 1980.

Data on shipments and unfilled orders are not available for ordnance, but given the industry's current low level of production and its ability to raise output quickly during Korea and Vietnam, the chance of a bottleneck here appears slim. More generally, all defense industries were able to up output quickly during Vietnam; and after the initial sharp rise in unfilled orders relative to shipments, the industries were able to reduce or moderate the growth of that ratio. In other words, if bottlenecks develop in defense industries they should not last for long. Which is not to say that bigger problems may not develop

in specific product areas; but if they do, increased profit opportunities will presumably spur firms to put more resources into producing the scarce goods, thereby alleviating the shortage.

In sum, outside of ships and tanks, and possibly aircraft, the Reagan military buildup is not expected to strain capacity in any industry to the point where severe shortages develop. Prices may rise faster in these defense-related industries than in other industries, and some slowdowns may occur in shipments to non-military customers, but major disruptions are unlikely. Thus, as with the macro, the micro impact of the Reagan defense budget will probably not be too much for the economy to handle with some room to spare.

HOUSING: WILL THE BUST EVER TURN TO BOOM?

Under the weight of 12%-16% mortgage rates the housing industry collapsed in 1980. Starts fell to 1.3 million units, far below the 1970s' peak of 2.36 million in 1972. And with mortgage rates currently above 17%, the housing outlook is indeed grim. The forecast calls for another dismal year in 1981 of about 1.3 million starts.

But looking further into the 1980s, the forecast reflects the belief that housing will rise again. The key reason: The foundations that support the housing industry are strong. More specifically, because the 1980s will witness a "middle-aging" of the mass of people born after World War II and up to 1960, it means households will be formed at a rapid rate this decade. And those households, in turn, will have to put roofs over their heads. Whether financial conditions will allow the baby boomers to buy their dream houses is doubtful, but buy and rent they will. The result: Residential construction will spurt.

Chart X illustrates the shift in the age structure of the population that will help housing in the '80s. At first glance, the

Chart X. Adult Population Shifts in the 1980s

Age Group	----Annual Average Change (Millions)--- 1970-80	1980-85	1985-90
20-24	.37	-.08	-.52
25-29	.63	.39	-.08
30-34	.65	.40	.34
35-44	.34	1.18	1.04
45-64	.30	.08	.34
65+	.52	.48	.52
TOTAL	2.82	2.40	1.64
TOTAL, 30 & Over	1.81	2.14	2.24

SOURCE: U.S. Census Bureau

figures in Chart X may look alarming for the housing industry: Total adult population grew by more than 2.8 million persons a year on average in the 1970s, but is projectd to grow by only 2.4 million annually in 1980-85 and 1.6 million 1985-90.

However, addition of the information in Chart XI shows why the population data actually contain good news for business people who depend on the housing market. Chart XI illustrates two points of major

Chart XI. The Goods News For House Builders

	Headship Rates*					
	---Actual---		----------Projected---------			
Age Group	1960	1970	1980	1985	1990	1995
20-24	23.0%	25.3%	31.1%	34.0%	36.0%	37.0%
25-29	39.5	44.8	47.6	49.0	50.0	51.0
30-34	45.1	48.4	51.8	53.0	55.0	57.0
35-44	47.9	50.9	52.9	54.0	55.0	56.0
45-54	52.9	52.9	54.5	55.0	55.0	55.0
55-64	55.0	58.0	58.3	59.0	59.0	60.0
65+	56.5	61.5	65.1	66.0	67.0	68.0

SOURCE: Data Resources Inc., McGraw-Hill Publications Co. Department of Economics

*A headship rate is the percent of people in an age group who head a household.

importance. Looking across the rows of the table shows that the proportion of people in each age group heading a household (headship rate) has increased over time, and is projected to increase even further. Thus, even if the population of each age group stays constant over time, more households would still form due to increasing headshhip rates. And the greater the number of households the greater the demand for housing.

The second point is seen by reading down the columns: The older the age group, the more households there are relative to the size of the group's population. Not surprisingly, the youngest age group has the lowest headship rate since many of these people are in institutional housing (college dorms, barracks) and thus do not add to private housing demand; young adults also have relatively low incomes and thus live with roommates, only one of which is considered head of household.

As people get older their incomes generally rise, and one of the things people buy more of when they have more money is housing. Moreover, because the divorce rate has risen and because more and more people have chosen to live alone for other reasons, the headship rate for most age categories exceeds 50%, meaning that fewer than two adults live in the average household. Assuming that these trends are not reversed and that real personal income continues to rise, headship rates are expected to increase as shown in Chart XI. Looking back at Chart X now suggests why the information there is upbeat for housing--the population will be aging in the '80s, and thus the average headship rate will be on the rise.

Getting more precise the number of American households in the coming years can be projected by multiplying headship rate for each age group by the population of the group. For example, in 1985 32.4 million people are projected to be 35-44-years old; and the headship rate for that group is estimated at 54%. Multiplying .54 times 32.4 million results in 17.5 million households. The results of these calculations for all age groups are given in Chart XII.

Significantly, Chart XII demonstrates that despite the slowdown in adult population growth, a projected rise in headship rates coupled

with the aging of the U.S. population results in a large increase in the number of households in the next five years. By way of comparison, the number of households rose by 7.7 million from 1970 to 1975 and 8 million from 1975 to 1980.

Chart XII. Household Growth Surges, Then Declines

Age Group	--Projected Households-- (Millions) 1985	1990	1995	-Projected Population- (Millions) 1985	1990	1995
20-24	7.0	6.6	6.3	20.9	18.3	17.0
25-29	10.5	10.6	9.4	21.5	21.1	18.4
30-34	10.5	11.9	12.1	19.9	21.6	21.2
35-44	17.5	20.7	23.2	32.3	37.6	41.4
45-54	12.6	14.2	17.3	22.9	25.8	31.4
55-64	13.2	12.6	12.7	22.3	21.2	21.1
65+	18.3	20.3	21.7	27.7	30.3	31.9
TOTAL	89.5	96.8	102.6	167.6	175.8	182.4
Change In Total from 5 Years Earlier	9.1	7.3	5.8	11.9	8.2	6.6

SOURCE: U.S. Census Bureau, McGraw-Hill Publications Co. Department of Economics

Since households are the primary source of housing demand, formation of 9.1 million new households by 1985 will put heavy pressure on the housing industry. As the last row of Chart XII shows, however, demand for housing will slacken later on in the decade as a result of reduced population growth in the primary household-forming age groups.

In addition to constructing residences for all the new households that form through 1985, builders will also be called on to put up a certain number of vacation and other seasonal homes. Also, a fraction of the nation's housing stock is usually left vacant--houses and

apartments that have not yet been sold or rented. Recent data indicates that second and vacant housing units amount to something less than 9% of the total stock of housing.

The housing stock, then, must be big enough to accommodate both the number of units required by households, and the number required by "other" demand--second homes and vacant units:

$$\text{Housing Stock} = \text{Households} + \text{Other Demand}$$

For 1985, the number of households is estimated at 89.5 million. Assuming that 8.5% of the housing stock is required for other demand, the equation--where ST_{1985} stands for the housing stock in 1985--becomes:

$$ST_{1985} = 89.5 + .085ST_{1985}$$

The projected housing stock in 1985, therefore, equals 97.8 million units, including mobile homes. Excluding mobile homes, the 1985 stock is projected at 93.4 million units; the non-mobile 1980 stock is estimated at 84.6 million.[1]

The total number of new housing units (excluding mobile homes) required to meet demand from 1980 to 1985 is the difference in the two

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[1] In 1978 (latest data available) mobile homes were 4.3% of the housing stock. Assuming the ratio was the same in 1980 implies that the 1980 housing stock excluding mobile homes was 95.7% of 88.4 million units, or 84.6 million. Due to heavy housing demand and tight financing conditions in the next few years, the forecast assumes more people will turn to mobile homes, so that the mobile share of total housing rises to 4.5% in 1985.

year's stock levels plus the number of units required for replacement (estimated at 0.26% per year of the average stock):

$$\text{Total Demand} = ST_{1985} - ST_{1980} + 5(.0026)\ (ST_{1980} + ST_{1985})/2$$
$$= 93.4 - 84.6 + 5(.0026)\ (93.4 + 84.6)/2$$
$$= 9.96 \text{ million units}$$

Finally, since all housing starts are not completed, the 9.96 million completed units must be adjusted upward to get the total number of starts. The five-year starts total is 10.2 million--an average of slightly more than 2 million starts per year on average for the five years 1981-85.

Since 1981 has been a disaster for the housing industry, starts for the year are estimated to hit only 1.2 million. And given that mortgage rates will still be on the high side in 1982, starts next year are forecast to come in at just 1.6 million. In 1981 and 1982, that is, a large unmet demand for housing will be building up.

If the five-year total of 10.2 million starts is to be attained then, it's obvious that the mid-1980s have to be a boom time for residential construction. And, in fact, the forecast does reflect that expectation--starts are projected to reach an all-time high of 2.4 million in 1985.

Moreover, some of the housing demand pent up in the early 1980s is expected to spill over into the 1985-90 period, so that starts in the latter 1980s will be a bit stronger than the population projections alone would suggest. Because the housing crunch will subside after the mid-1980s, the forecast also assumes a small decline in the share of

mobile homes in the housing stock. Replacement demand is also expected to rise in the later period as financial conditions and excess housing demand ease. All of these assumptions work to raise the forecast for 1985-95. Nonetheless, the 1985-95 housing forecast is still primarily driven by population and headship rate projections.

And because of those projections the housing starts forecast at the back of ths report is fairly bullish. How could this forecast go awry?

Probably the most sensitive aspect of the housing projection is the headship rate: If headship rates stay flat through the forecast period, housing starts will fall short of the projections by 300 to 400 thousand units a year. In that case, housing would do relatively well in the mid-1980s (starts would hit 2 million), but would be weak thereafter.

The forecast is also sensitive to assumptions about replacement demand. For 1980-85, a low depreciation rate based on the 1970s was used; if the higher rate of the 1960s were applied, projected starts would be much greater. A low rate, however, seemed appropriate for the first half of the 1980s: Tight financing will lead some people to rehabiliate property rather than move to new quarters, and strong demand for housing will limit the ease with which people can move.

Similarly, tight supply-demand and financial conditions could squeeze down the vacancy rate and the demand for second homes in the early-to-mid 1980s, thereby reducing the number of housing units started. These conditions could also cause property owners to cut up large units into a greater number of smaller ones, or to turn

commercial into residential structures to capitalize on the heavy housing demand. Such actions would also reduce the amount of new construction required to shelter the growing number of households.

The forecast's final potential flaw is the possibility that the supply of housing may simply not be able to catch up to demand. In this scenario, excess demand would be chronic through the 1980s, resulting in great upward pressure on house prices and reduced household formation--more young people living at home, for example, or more people living with relatives or roommates. House builders however, attracted by hefty demand and by prices that will rise faster than the general rate of inflation, are expected to respond to the profit motive and to meet demand by the latter 1980s.

JAPAN IN THE 1980s: LAND OF RISING CAPITAL EXPORTS

As some Americans agonize over the economic impact of Japanese steel and auto imports, many Japanese are turning their thoughts elsewhere--to new industries and to different business strategies. It's not, of course, that the Japanese will cease to produce lots of steel and cars or cease to export these products; it's rather that the direction of the Japanese economy is expected to change somewhat in the 1980s. And any shift in the dynamic Japanese economy is sure to have important implications for the American business community.

One of these shifts will result from continued de-emphasis of basic industry and emphasis of high-technology industry. As a country poor in natural resources, Japan's economic strategy is to capitalize on its high educational level and its ability to apply high-technology knowhow in order to boost productivity, output, and the standard of living. In particular, the Japanese government hopes that technological gains in the 1980s will increasingly be applied to the nonmanufacturing sector of the economy, where increases in productivity have lagged.

The key industry in Japan's technological thrust this decade will likely be integrated circuits, which according to Japan's Ministry of International Trade and Industry (M.I.T.I.) could grow by 17% a year (in real terms) through 1990. Such rapid growth would mean Japanese integrated circuit sales of $100 billion (1980 dollars) in 1990. The Japanese, of course, are already making headway towards this goal. But penetration of the U.S. market will by and large not come via exports.

Instead, it will come from direct investment in the U.S.. And already, large Japanese integrated circuit producers such as Sony, Hitachi, Toshiba, Mitsubishi, and Nichiden have invaded the U.S. market, producing circuits in U.S. plants. With major U.S. circuit makers likewise manufacturing in Japan, the stage is set for fierce high-tech electronics competition in the 1980s.

The Japanese approach this decade to basic industries such as steel and chemicals will, on the surface, resemble the approach to electronics--investment in production facilities abroad. In fact, however, the strategies are poles apart. Electronics firms are expected to invest abroad in developed nations to expand their markets and their technologies. Basic industries, by contrast, plan to invest abroad in developing nations to take advantage of lower labor costs and to sell expertise in current technology. (They also plan to license technology to companies in developed countries.)

In effect, Japan is conceding that its comparative advantage in (say) steel production is passing to newly industrializing countries like Korea. From an American vantage point, that seems like an astounding admission--to say that an important industry is really more appropriate to a lower stage of economic development. Yet that is the line that both the Japanese steel industry and M.I.T.I. have adopted. (While having no direct control over industry, M.I.T.I. provides "administrative guidance" to Japanese businesses by issuing its views on what industries should look like in the future. M.I.T.I. can also allocate research and development funds to industry to back up its views.)

The future of the Japanese auto industry seems to lie closer to the high-tech revolution than to the basic industry devolution. Like

high-tech Japanese companies, Japanese makers of motor vehicles intend to build and operate plants in the U.S. For example, Nissan is currently building a truck assembly plant in Tennessee; and Honda (which manufactures motorcycles in Ohio) plans to produce mini-cars at several U.S. sites. In addition, Japanese companies that supply the auto industry--like Bridgestone in tires and Nippondenso (a Toyota affiliate) in parts--are also setting up shop in the U.S.

This influx of Japanese auto and auto supply companies naturally means intensified competition for American firms. But at the same time, the auto market will likely witness increased cooperation between U.S. and Japanese producers. The major U.S. producers already have links with Japanese car firms--General Motors-Isuzu, Ford-Toyokogyo (Mazda), Chrysler-Mitsubishi--and they have further plans for mini-car development and production in Japan. The Americans are also increasing purchases of parts from affiliates of Toyota and Nissan.

In short, while Japanese auto firms will be making direct inroads to the U.S. market, U.S. manufacturers will simultaneously be strengthening ties with their Japanese counterparts.

Thus, while adopting the high-tech strategy of investing abroad to expand market share, Japanese auto companies are looking at a different competitive climate in the 1980s than will the electronics firms. For while confrontation between Japanese and American companies will likely intensify in high-technology fields in the '80s, sharp competition may evolve into cooperation in the automobile industry. Meanwhile, competition from Japanese steel imports may slacken as the decade unwinds, only to be replaced by competition from Korea and other countries where Japanese capital will build modern plants that employ the most uptodate knowhow.

Besides having to contend with Japanese moves on the manufacturing front in the 1980s, U.S. business will also have to be aware of developments in such Japanese industries as finance, insurance, and communications. For as Chart XIII shows, Japanese development in the past decade has not stressed manufacturing, a trend that is expected to continue. In particular, the transport and communications industries have been producing increasing shares of Japanese output, as have finance, insurance, and real estate. And as these growing industries flex their muscles in Japan, they are expected to reach out for larger markets abroad, including the U.S.

Thus, nonmanufacturing firms will number among Japan's offensive foreign investors--like the electronics and auto companies. Meanwhile, Japan's steel and chemical companies will be defensive foreign investors, seeking to preserve world market shares with existing technology but producing at lower cost. Whatever the motive for foreign investment, as the 1980s progress the internationalization of Japanese production may become more important for Americans than Japanese exports. At a minimum, Japanese industrial strategy will surely mean U.S. companies will face even stiffer competition this decade than they did in the 1960s and 1970s, when Japan became the world paragon of economic dynamism.

CHART XIII. CHANGES IN JAPAN'S INDUSTRIAL STRUCTURE

INDUSTRY	% Share of Total Ouput				
	1970	1975	1980	1985	1990
Agriculture-forestry-fishery	5.37%	4.41%	3.70%	3.60%	3.36%
Manufacturing	46.76	43.36	44.00	43.81	43.16
Construction	10.10	10.31	10.09	9.96	9.92
Electricity-gas-water	1.69	1.83	1.98	1.89	1.84
Wholesale-retail trade	8.69	9.05	10.12	10.43	10.85
Finance-insurance-real estate	6.36	8.09	7.66	7.63	7.57
Transport-communications	4.65	6.68	7.01	7.41	7.66
Services	10.68	10.14	9.97	10.27	10.93
Government service-private non-profit sector	5.70	6.13	5.47	5.00	4.71
TOTAL	100.00	100.00	100.00	100.00	100.00

SOURCE: The Japan Economic Research Center.

Summary

The economy began the 1980s in a state of high uncertainty: A sharp recession hit in the second quarter of 1980, interest rates climbed to record peaks, inflation dug in more firmly. Given these conditions, forecasting the economy through the 1980s takes on the same degree of uncertainty.

However, at least two key features of the economy during the 1980s should be predictable with a greater degree of certainty--defense and housing. Defense spending will essentially reflect the Reagan Administration budget program. Housing construction will essentially reflect adult population change, which in turn depends on the current age structure of the population. And for both defense and housing, their respective determinants point to strong growth at least through mid-decade.

As for defense, the Reagan Administration is pushing for 8% real growth per year for the next several years. The forecasts in this report assume a slower but still robust rate of growth of 5% a year for defense. This 5% buildup--or even an 8% one--appears too small to have a major impact on inflation and consumption. Moreover, while certain industries such as ordnance, aircraft, shipbuilding, and communications equipment will surely enjoy the benefits of significant Defense Department orders, they and most of their suppliers are not likely to develop production bottlenecks. The bulk of the economy that is not directly tied to defense, therefore, will probably not suffer from shortages and sharp cost increases due to the hike in military demand.

While defense spending can pick up right away, the severely depressed housing industry faces further bleakness--17% mortgage rates now in effect will keep builders in a strait jacket for at least several more months. Next year, lower rates are expected to loosen the strait jacket a bit, but a continued high level of rates is projected to prevent the industry from busting loose.

Further into the '80s, however, indicators point to a housing boom: The baby boomers are and will be entering the period of their lives when people form households at a rapid rate. And the more households formed, the more housing units that are needed. These needs are forecast to peak at mid-decade, with housing starts at a record 2.4 million units in 1985. Subsequently, starts are expected to decline to 1.8 million by 1990 as fewer people enter adulthood.

Turning to the international scene in the 1980s, one key player will obviously be Japan. But while in the past two decades Japan gained international superstardom by exporting tons of goods, its impact on the international economy this decade will more likely come from the export of capital.

In high-technology fields like integrated circuits Japanese companies are aleady producing in the U.S., and they will seek to boost their production here. The Japanese will also operate plants here to manufacture motor vehicles and motor vehicle supplies. By contrast, basic industries in Japan like steel and chemicals will not look to the U.S. or other developed countries to set up shop. Instead, they plan to export their capital and their knowhow to newly industrializing countries like Korea.

For American companies, Japanese investment strategies in both developed and developing countries point to important changes in competitive conditions. Direct Japanese investment in the U.S. means that head-to-head competition in certain industries like electronics will intensify. And Japanese export of basic industry plants and technological knowhow will mean increased competition from, say, Korean steel exports. In short, even if the Japanese seem to modify their merchandise export thrust in the 1980s, Japanese capital exports could create an even keener competitive environment than in the past.

LONG-TERM FORECASTS AND HISTORY

History	Billions of Dollars: Gross National Product	Billions of Dollars: Personal Consumption Expenditures	Billions of Dollars: Nonresidential Fixed Investment	Real GNP (Billions of 1972 $)	Industrial Production Index, 1967=100)	Inflation (GNP Deflator, 1972=100)
1950	286.5	192.0	27.3	534.8	44.9	53.56
1960	506.5	324.9	48.5	737.2	66.2	68.70
1970	992.7	621.7	103.9	1085.6	107.8	91.45
1971	1077.6	672.2	107.9	1122.4	109.6	96.01
1972	1185.9	737.1	121.0	1185.9	119.7	100.00
1973	1326.4	812.0	143.3	1255.0	129.8	105.69
1974	1434.2	888.1	156.6	1248.0	129.3	114.92
1975	1549.2	976.4	157.7	1233.9	117.8	125.56
1976	1718.0	1084.3	174.1	1300.4	130.5	132.11
1977	1918.0	1205.5	205.5	1371.7	138.2	139.83
1978	2156.1	1348.7	242.0	1436.9	146.1	150.05
1979	2413.9	1510.9	279.7	1483.0	152.5	162.77
1980	2626.1	1672.8	296.0	1480.7	147.1	177.36
Projections						
1981	2920	1858	328	1512	152	193.07
1982	3246	2042	378	1554	160	208.85
1983	3723	2353	418	1640	170	227.00
1984	4238	2683	468	1719	177	246.52
1985	4751	3009	521	1786	184	266.00
1986	5298	3356	584	1851	192	286.22
1987	5893	3601	653	1919	200	307.11
1988	6533	3995	727	1988	209	328.61
1989	7213	4574	807	2061	218	349.97
1990	7903	5014	888	2136	227	370.00
1995	12,310	7892	1356	2562	273	480.50

SOURCES: U.S. Department of Commerce, Federal Reserve Board, McGraw-Hill Publications Co. Department of Economics

History	Population (Millions)	Households (Millions)	Housing Starts* (Millions)	Civilian Employment (Millions)
1950	152.3	43.6	1.908	58.9
1960	180.7	52.8	1.252	65.8
1970	203.3	63.4	1.434	78.6
1971	206.8	64.8	2.052	79.1
1972	209.3	66.7	2.357	81.7
1973	211.4	68.3	2.045	84.4
1974	213.3	69.9	1.338	85.9
1975	215.5	71.1	1.160	84.8
1976	217.6	72.9	1.538	87.5
1977	219.8	74.1	1.987	90.5
1978	222.1	76.0	2.020	94.4
1979	224.6	77.3	1.745	96.9
1980	226.5	80.4**	1.304	97.3
Projections				
1981	228.6	81.6	1.306	98.8
1982	230.8	83.2	1.634	100.5
1983	232.9	85.2	2.200	103.0
1984	235.1	87.3	2.300	105.0
1985	237.3	89.5	2.400	107.0
1986	239.5	90.9	2.300	108.7
1987	241.7	92.4	2.200	110.4
1988	243.8	93.8	2.100	112.0
1989	245.9	95.3	1.800	113.5
1990	248.0	96.8	1.800	115.0
1995	257.3	102.6	1.800	122.0

SOURCES: U.S. Census Bureau, U.S. Department of Commerce, Bureau of Labor Statistics, McGraw-Hill Publications Co. Department of Economics

*Excludes mobile home shipments

**This figure is from the 1980 Census. The Census Bureau has not yet revised its household estimates back to 1970. The unrevised 1980 Census estimate was 79.1 million.